

College Mathematics

Description of the Examination

The CLEP College Mathematics exam was developed to cover material generally taught in a college course for non-mathematics majors and majors in other fields not requiring a knowledge of advanced mathematics. Nearly half of the exam requires the candidate to solve routine straightforward problems; the remainder involves solving nonroutine problems in which candidates must demonstrate their understanding of concepts. The exam includes questions on logic and sets, the real number system, functions and their graphs, probability and statistics, and topics from algebra. Familiarity with certain symbolism and notation is assumed. The exam places little emphasis on arithmetic calculations, and it does not contain any questions that require the use of a calculator. However, the use of a scientific calculator (nongraphing, nonprogrammable) is permitted during the exam.

The exam contains approximately 65 multiple-choice questions to be answered in two separately timed 45-minute sections.

Some colleges grant credit for, or exemption from, a specific required mathematics course that covers material similar to that contained in this exam; others may grant up to six semester hours (or the equivalent) of general credit toward fulfillment of a liberal arts or distribution requirement in mathematics.

Knowledge and Skills Required

Within the subject-matter content described, questions on the exam require candidates to demonstrate the following abilities in the approximate proportions indicated.

- Solving routine, straightforward problems (about 50 percent of the exam)
- Solving nonroutine problems requiring an understanding of concepts and the application of skills and concepts (about 50 percent of the exam)

The subject matter of the College Mathematics exam is drawn from the following topics.

Approximate Percent of Examination

10%	Sets
10%	Logic
20%	Real Number System
20%	Functions and Their Graphs
25%	Probability and Statistics
15%	Additional Algebra Topics

10% Sets

Union and intersection
Subsets
Venn diagrams
Cartesian product

10% Logic

Truth tables

Conjunctions, disjunctions, implications, and negations

Conditional statements

Necessary and sufficient conditions

Converse, inverse, and contrapositive

Hypotheses, conclusions, and counterexamples

20% Real Number System

Prime and composite numbers

Odd and even numbers

Factors and divisibility

Rational and irrational numbers

Absolute value and order

Binary number system

20% Functions and Their Graphs

Domain and range

Linear, polynomial, and composite functions

25% Probability and Statistics

Counting problems, including permutations and combinations

Computation of probabilities of simple and compound events

Simple conditional probability

The mean and median

15% Additional Algebra Topics

Complex numbers

Logarithms and exponentials

Applications

Study Resources

To prepare for the College Mathematics exam, students should read and study a variety of introductory college level mathematics textbooks. Elementary algebra textbooks cover many of the topics on the Mathematics exam. Students should visit their local college bookstore to determine which textbooks are used by the college for mathematics courses. When selecting a textbook, students should check the table of contents against the "Knowledge and Skills Required."